

IN THE CLAIMS:

1. (Canceled)
2. (Previously Presented) A machine vision system, comprising:
 - A) an addressable a first lighting system adapted to produce light, the addressable first lighting system comprising:
 - i) a first light source adapted to produce a first component of the light having a first spectrum; and
 - ii) a second light source adapted to produce a second component of the light having a second spectrum, the first spectrum being different than the second spectrum; and
 - B) a processor coupled to the addressable first lighting system and adapted to transmit first lighting command signals to modulate the light, the addressable first lighting system being configured to distinguish the first lighting command signals from other information transmitted by the processor.
3. (Previously Presented) The machine vision system of claim 2, wherein at least one of the first light source and the second light source comprises at least one LED.
4. (Previously Presented) The machine vision system of claim 2, wherein the processor is configured to modulate at least one of the first light source and the second light source to change at least one of a hue, a saturation and an intensity of the light.
5. (Previously Presented) The machine vision system of claim 2, wherein at least one of the first light source and the second light source comprises a UV radiation source.

6. (Previously Presented) The machine vision system of claim 2, wherein the first lighting command signals are selected to achieve at least one of pulse width modulation, pulse amplitude modulation, and pulse displacement modulation of at least one of the first light source and the second light source.
7. (Previously Presented) The machine vision system of claim 2, further comprising a vision system.
8. (Previously Presented) The machine vision system of claim 7, wherein the vision system is adapted to produce a gray scale image of an object illuminated by the light.
9. (Previously Presented) The machine vision system of claim 2, further comprising a second lighting system adapted to produce a second light, wherein the first lighting system is adapted to illuminate an object at a first illumination angle and the second illumination system is adapted to illuminate the object at a second illumination angle.
10. (Previously Presented) The machine vision system of claim 9, wherein the second lighting system comprises:
 - i) a third light source adapted to produce a first component of the second light having a third spectrum; and
 - ii) a fourth light source adapted to produce a second component of the second light having a fourth spectrum, the third spectrum being different than the fourth spectrum.
11. (Previously Presented) The machine vision system of claim 9, wherein the processor is coupled to the second lighting system and adapted to transmit second lighting command signals to modulate the second light.

12. (Previously Presented) A method of illuminating an object, for use with a machine vision system, the method comprising steps of:

in accordance with at least one first addressed command signal, illuminating the object with a first light having a first spectrum and a second light having a second spectrum, the first spectrum being different than the second spectrum; and

modulating at least one of the first light and the second light, whereby the object is illuminated with modulated light.

13. (Previously Presented) The method of claim 12, wherein at least one of the first light and the second light comprises light from an LED.

14. (Previously Presented) The method of claim 12, wherein the step of modulating comprises modulating at least one of the first light and the second light to change at least one of a hue, a saturation and an intensity of light incident on the object.

15. (Previously Presented) The method of claim 12, wherein at least one of the first light and the second light comprises UV radiation.

16. (Previously Presented) The method of claim 12, wherein the step of modulating comprises at least one of pulse width modulating, pulse amplitude modulating, and pulse displacement modulating at least one of the first light and the second light.

17. (Previously Presented) The method of claim 12, further comprising a step of forming an image of the object with at least one of a portion of the first light and a portion of the second light.

18. (Previously Presented) The method of claim 17, wherein the image is a gray scale image.

19. (Previously Presented) The method of claim 12, wherein the first light illuminates the object at a substantially same angle as the second light.
20. (Previously Presented) The method of claim 19, further comprising a step of illuminating the object at a second illumination angle with a third light.
21. (Previously Presented) The method of claim 20, further comprising a step of illuminating the object with a fourth light at the second illumination angle, the fourth light having a fourth spectrum that is different than the third spectrum.
22. (Previously Presented) The method of claim 21, further comprising modulating at least one of the third light and the fourth light.
23. (Previously Presented) A machine vision system, comprising:
a first lighting system adapted to produce light in response to at least one lighting command signal, the first lighting system comprising:
i) a first light source adapted to produce a first light component having a first spectrum; and
ii) a second light source adapted to produce a second light component having a second spectrum, the first spectrum being different than the second spectrum; and
iii) a processor adapted to receive the at least one lighting command signal and modulate at least one of the first light component and the second light component in accordance with the at least one lighting command signal.
24. (Previously Presented) The machine vision system of claim 23, wherein at least one of the first light source and the second light source comprises at least one LED.

25. (Previously Presented) The machine vision system of claim 23, wherein the processor is configured to modulate at least one of the first light source and the second light source to change at least one of a hue, a saturation and an intensity of the light.
26. (Previously Presented) The machine vision system of claim 23, wherein at least one of the first light source and the second light source is a UV radiation source.
27. (Previously Presented) The machine vision system of claim 23, wherein the at least one lighting command signal is adapted to achieve at least one of pulse width modulation, pulse amplitude modulation, and pulse displacement modulation of at least one of the first light source and the second light source.
28. (Previously Presented) The machine vision system of claim 23, further comprising a vision system.
29. (Previously Presented) The machine vision system of claim 28, wherein the vision system is adapted to produce a gray scale image of an object illuminated by the light.
30. (Previously Presented) The machine vision system of claim 23, further comprising a second lighting system adapted to produce a second light, wherein the first lighting system is adapted to illuminate an object at a first illumination angle and the second illumination system is adapted to illuminate the object at a second illumination angle.
31. (Previously Presented) The machine vision system of claim 30, wherein the second lighting system comprises:
- i) a third light source adapted to produce a first component of the second light having a third spectrum; and

ii) a fourth light source adapted to produce a second component of the second light having a fourth spectrum, the third spectrum being different than the fourth spectrum.

32. (Previously Presented) The machine vision system of claim 30, wherein the second lighting system comprises a second processor adapted to receive at least one second lighting command signal to modulate the second light.

33. (Previously Presented) A machine vision system, comprising:

A) a first lighting system adapted to produce light, the first lighting system comprising:

i) a first light source adapted to produce a first light component of the light having a first spectrum;

ii) a second light source adapted to produce a second light component of the light having a second spectrum, the first spectrum being different than the second spectrum; and

iii) a first processor adapted to receive a first lighting command signal to modulate the light; and

B) a second processor coupled to the first lighting system and adapted to transmit the first lighting command signal to the first processor.

34. (Currently Amended) A machine vision system of claim ~~36~~33, wherein the first lighting system is an addressable lighting system.

35. (Previously Presented) A method of illuminating an object, for use with a machine vision system comprising A) a first lighting system adapted to produce light, the first lighting system comprising i) a first light source adapted to produce a first light component having a first spectrum, ii) a second light source adapted to produce a second light

component having a second spectrum, the first spectrum being different than the second spectrum, and iii) a first processor, and B) a second processor, the method comprising:

illuminating the object with the first light component;

illuminating an object with the second light component;

transmitting a first lighting command signal from the second processor to the first processor; and

modulating at least one of the first light and the second light with the first processor, in accordance with the first lighting command signal.